HOW TO LIFT WEIGHTS INTELLIGENTLY

by Joseph Elijah Barrett

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Introduction

You may think lifting weights is a 'no brainer.' After all, you just lift a dumbbell or barbell a set number of times and then rest. Right? Well, yes and no.

I don't want to make it sound as if weight training is complicated–that you have to be a rocket scientist in order to do it right. But on the other hand I don't wish to paint a picture of 'tip-toeing through the tulips' with careless abandon either. There is a right way and a wrong way to do anything. That includes lifting weights. And although it isn't difficult, doing it the wrong way can lead to injury (which is counterproductive to your goal.)

The purpose of this e-book is to give you my thirty years of bodybuilding experience. In those thirty years I have made every mistake in the book, and maybe a few that are not in the book.

One great lesson that bodybuilding has taught me is *how to lose weight*. Successful competition at either the amateur or professional level depends heavily on losing as much body fat and excess water as possible.

Of course this translates into my being able to help others to lose weight too.

(Photo Left: This picture was taken in 1980, 2 years after I began weight training; I was 29 years old)

In the Beginning...

In 1978 I knew I wanted to lift weights in order to 'beef' up my pathetically thin physique. I just didn't know the correct way to perform many of the exercises. Although I had purchased Arnold Schwarzenegger's book, *The Education of a Bodybuilder*, I had no hands-on experience.

The book though inspired me, and showed the great variety of exercises for various body parts. Arnold carefully explained each exercise, and showed the correct technique and form. The text was accompanied with photos of the 'Austrian Oak' himself performing the exercises.

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Lifting weights *un*intelligently can lead to injuries which will delay your exercise program, and frustrations which will perhaps turn you away from this bone and muscle strengthening regime.

Thank God I've never had any serious injuries–those which required surgery to repair. Or injuries bad enough to keep me out of the gym for months at a time. But I have had numerous nagging injuries which age has magnified (I am now 56 years old.) These injuries, though not serious, could nevertheless have been avoided.

(Photo Left was taken at the April, 2001 Mr. New Jersey Over 35 Physique Competition; I was 49 years old)

I will explain the mind-set that you should adopt before beginning a weight lifting program, or one that you can retrofit into an existing program. (It is never too late to learn.)
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How to Lift Weights Intelligently is a ‘learn from my mistakes’ e-book. Done correctly, weight training can be incorporated into your daily exercise program despite your age or gender. As a matter of fact, weight training should be a part of everyone’s program in spite of age and gender! It is that important.

Do you realize that weight training is the foundation of just about every sport imaginable. Even some golfers train with weights to improve their game–Tiger Woods lifts weights. Other professional sports such as baseball, football, and basketball all incorporate a weight training program.

I personally know two gentlemen in their 80s who continue to lift weights. And there are many women, young and old, who enjoy ‘pumping iron.’

Lifting weights has become not only a passion, but way of life for me. It is definitely something everyone of us *should* incorporate into his or her life. It offers benefits that cardiovascular or aerobics just can’t. Don’t get me wrong. Aerobics has its place in any exercise program. I just want to emphasize that it isn’t an either/or proposition. Lifting weights and aerobics should go hand-in-hand.

Weight lifting and aerobics can both be incorporated into the same program too. It is not necessary to have two separate programs. *Circuit training* combines weights with aerobics. In this type of program you will use lighter weights than you would normally use if you did each separately. You will also not rest in between sets. This will give you the *aerobic* or *cardiovascular* effect.

Everything that goes for weight training as a separate program applies to circuit training too. After all, you can just as easily injure yourself using a lighter weight or not warming up properly as you can using heavier weights.

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Weight lifting will prevent the inevitable muscle loss (atrophy) which naturally happens as we age. By age 40, a person begins losing one percent of his muscle per year. Did you know that studies have shown that a person in his/her 80s can double his/her strength in six weeks in a supervised weight training program?

Note these other benefits of weight lifting:

☛ one pound of muscle has 600 calories while one pound of fat contains 3,500 calories
☛ you can lose 11 pounds in a year by lifting weights twice a week
☛ for every three pounds of muscle gained through weight lifting, your metabolic rate increases by 120 calories per day.

With all the of the above and countless other benefits that are derived from a consistent weight lifting program, no one wants to be sidelined with an injury that could easily have been prevented. That’s where *intelligent* weight lifting comes in.

Through my years of lifting weights, I have been guilty of lifting weights which were too heavy. That in turn has led to lifting in ‘bad form.’ I have also started a lifting session without adequately warming up, or forgoing warming up altogether. I have also experimented with lifting weights without first eating.

All of these issues and more will be addressed in this e-book.
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CHAPTER 1: THE BASICS

The Weights

Weightlifting is, as the name implies, about *lifting weights*. These weights which are made of metal come in a variety of shapes, sizes, and, *weights* (poundage.)

Back when I began lifting weights seriously thirty years ago, you could purchase weights which were vinyl-coated concrete. My first set of weights was vinyl. It consisted of a metal barbell, and if I remember correctly, two metal dumbbell rods, along with several vinyl coated plates of various weights.

Barbells, dumbbells, and cables are what is known as *free weights*. The term has nothing to do with not having to pay money for the weights. The 'free' in free weights designates that the weights are not a part of a machine–they are independent.

Although it can be argued that cables are a part of a machine, they still allow a measure of independent movement.

Dumbbells are weights designed to be held in one hand. The bar along which the plates sit is short. The weights on these bars are on both ends. Dumbbells come in two distinct types. On one type, the weight at each end is solid. On the other, the weight consists of individual plates.

At above left is a picture of a dumbbell with solid weights at each end. The weight of this particular dumbbell is 5 pounds. Notice that the dumbbell is designed to be held with one hand. At right is a photo of a pair of dumbbells with plates. Each end has an identical number of plates and amount of weight.

The other type of free weight is known as a barbell. A barbell is designed to be held with both hands. The bar is much longer than a dumbbell bar.

Above is a picture of a barbell. Notice that the bar is much longer than that of a dumbbell. This barbell is small. Barbells also come in Olympic size. The standard weight of an Olympic bar is 45 pounds. There are plates ranging in weight from 2-1/2 pounds all the way up to 100 pounds with standard holes designed for these bars.

Barbells are also made to take the strain off your wrists. They are known as E-Z curl bars (See above.) Notice that the bar is not straight, but angled. These bars are good when training the arms. When heavier weights are used, they effectively take the strain off your wrists.

Barbells VS. Dumbbells

The use of barbells and dumbbells enables you to do an almost endless variety of exercises. All muscles which you can target with a barbell can be targeted with a dumbbell, and vice versa. However, suppose I want to train my arms one at a time. I can't do that with a barbell but I can with dumbbells. You are only limited by your imagination when you use free weights.

I have used a combination of barbells and dumbbells over the years. They are both beneficial. Although they can pretty much be used interchangeably, they stress the muscle in different ways.

Machines

In addition to free weights, there are a wide variety of machines on which to lift weights. The weights on these machines are not free, but fixed. They are a part of the machine. But there are other machines which use free weight consisting of plates of various weights. You simply load the desired amount of weight. These plates are not a part of the machine. Even so they are still classified as 'machines.'

The gym where I train has at least three machines which are designed for biceps. Two of these machines have fixed weights which are selected with a pin. The other machine has to be loaded with weight.

Muscles can only be worked in a fixed path using machines. And unlike free weights, auxiliary muscles are not needed to stabilize the weight being lifted.

One multi-purpose machine which has been around for quite some time is the 'Universal' machine. It is aptly named because this machine has several stations on which you can work out every muscle group. The weights on the universal machine are in increments of ten pounds. Pins are used to select the desired weight. For instance if I wanted to use 50 pounds for shoulder presses, I would place the pin in the fifth weight down.

Another machine is called the 'Smith' machine. It consists of a barbell which is rigged to move in a fixed vertical path. The entire machine itself is taller than the average man and can be used to work legs, chest, and shoulders.

There are also other machines which are designed to work only one muscle group. Machines have been designed specifically for the legs, chest, back, biceps, triceps, abdominal, and calves.

Some machines come with weights consisting of plates like those on the Universal machine. And, as stated above, other machines are designed to be loaded with weights you ordinarily would use to load up a typical barbell. Machines can be integrated with free weights for a highly effective weight lifting program.

Training at Home VS. Training in a Gym

Weight training can be equally effective at home as well as at the local gym. I began lifting weights at home. Home has the benefit of no membership fees and no commute. And if you are shy, you don't have to worry about anyone else seeing, or watching, you.

At home I started with a 110-pound barbell set, and then purchased a bench. I gradually bought more plates (metal) until I had a few hundred pounds of weights in my 7th floor apartment's livingroom. Unless you plan on becoming an Olympic lifter or competitive bodybuilder where heavy weights and spotters are required, the home makes an ideal gym.

Although working out at a gym requires annual membership fees as well as the commute, it does have its advantages. There is a wide assortment of machines and free weights available. You also have someone there

who can assist you if you have a question. And if you do heavy lifting, you can always find a 'spotter.' (A spotter is someone who is there to help you when you lift heavy.)

In addition to an almost endless variety of weights, a typical gym has tons of aerobic equipment. There are treadmills, exercise bikes, and stairclimbers. They also have equipment where you can work your abdominal muscles–slant boards, Roman chairs, ab machines, and a high bar on which you can do hanging leg raises.

A gym is a place where you can meet like-minded people too. They are all there for the same reason as you are–hopefully. As such, the 'atmosphere' can be a great morale booster. You may also 'hook-up' with a training partner–or partners. I have worked out by myself and with several training partners over the years.

I have been working out in a gym for 26 years. I've had training partners and I have gone 'solo.' My personality is such that I can go either way. If you are self-motivated and disciplined, you can probably work out by yourself–if you so choose. But if you are not very well disciplined you may find it beneficial to find a good training partner.

A training partner is incentive to get to the gym even when you'd rather stay in bed, or do something else.

Gym Etiquette

There are several unspoken rules that should be observed if you decide to work out in a gym. But before I go into that, I should mention that there are basically two types of gyms where you can lift weights and do your cardio–**hardcore** and all the others.

A 'hardcore' gym is one which is geared to the serious bodybuilder–amateur or professional. When I say 'geared', I don't mean to imply that no one else is allowed. But simply that they are usually liberal as far as clothing and noise level are concerned. These gyms are usually owned and managed by bodybuilders who have competed in the past, or are currently competing.

You may find chalk, stools, and platforms lying around hardcore gyms. These are accessories used to improve hand grip, to reach chin-up bars, and to elevate yourself for doing hack squats or heavy barbell shrugs. Many times the equipment is not shiny and they definitely have a well-used look.

I train at Diamond Gym located in Maplewood, NJ. This gym is managed by former competing bodybuilders. It is definitely hardcore. It attracts professional wrestlers and amateur and professional bodybuilders, and high school and college athletes. But even those who merely wish to lose weight or simply get in shape train there–men and women.

At that gym and others like it you can grunt, shout, and drop your weights. It's all a part of the atmosphere. And then you have gyms at the other end of the spectrum. These gyms frown upon loud grunts and groans and the dropping of weights. Some are even particular about the type of workout clothing worn. I am not ridiculing these gyms by any means, but merely pointing out what I have heard and experienced.

Many of your non-hardcore gyms are the familiar chains. They are full of polished, chrome-like machines and maybe even have a juice bar. Management at these gyms are particular about the type of clothing members wear, and how they conduct themselves while there.

There was a news report last year about a gym member who was kicked out because he 'grunted' while working

out. He was a serious hardcore bodybuilder but unfortunately the gym itself wasn't hardcore. Of course that brought 'chuckles' from myself and others. (When you train intense and heavy, you will 'grunt' from the effort.)

Which type of gym should you work out in if you decide to train outside the home? That depends on you and your comfort level. If you are not easily intimidated by a few well-developed men and women, then a hardcore gym will work for you. If nothing else, it will certainly keep you motivated to reach your personal goal.

Now as far as etiquette is concerned, there are a few rules which will make the training atmosphere pleasant for you and all the others at the gym.

Courtesy

When I want to use a certain piece of equipment or a set of dumbbells, and I see a person near them, I ask if he is using it. After a set, barbells and dumbbells are set down. And if a machine or bench is being used, a person might get up in between sets. It's just polite to ask. After all, you wouldn't want anyone jumping in while you rest between sets–at least not without asking.

And it has been my experience that if asked, that person would be more than happy to let you work in between his sets.

When you are finished using a barbell or a set of dumbbells, return them to their respective racks. You'd be surprised how many people do not even do this. Free weights and dumbbells not only clutter up a gym floor, but they can become potential hazards.

I have crushed my hand and fingers a few times after finishing a set because some thoughtless person left dumbbells scattered on the floor. I assure you, it is not a pleasant experience.

When doing an intense set, you may perspire–especially in the summer months. This is natural and normal. When you use a bench or machine, make certain to wipe up any perspiration that you may leave. Doing this shows consideration for the next person. Imagine how you would feel if you went to use a particular bench or machine and it was glistening with someone else's sweat! Yucchhhh!

If the gym where you train allows you to carry sports drinks or water around, make sure to properly dispose of the container when finished. Some gyms may not allow you to carry it away from the bar. My gym does.

Personal hygiene is important in the gym. Make certain to keep your workout clothes, and yourself, clean and odor-free.

Don't use the benches or machines for any other purpose than for what they were designed for–workouts. Although I am guilty of sometimes monopolizing a bench for sitting between sets, it is inconsiderate. When someone wants to use it, I usually apologize–that's just the way I am.

On the other hand, when I see someone sitting and apparently doing nothing, I will politely ask if he is using the bench. This way no one's feelings are hurt, and the atmosphere remains cordial. I have seen flare-ups in the gym and they could all have been avoided by applying a good dose of **etiquette**.

If I want to use a piece of equipment which is currently being used, I will ask the person how many sets he has left. Don't just walk in and use the machine or equipment without asking–it isn't polite. If the person is just

beginning, you have two options. You can go to plan B–or you can ask if you can work in if there aren't too many people already using the equipment or machine.

The maximum number of persons working together should total no more than **three**. So if you want to use a machine and it is being used by a team of two people or less, it is doable (again, ask before jumping in.) But if the team consists of three people, go do something else.

Why only three people? Any more than that and the wait for each person's turn is too long. You want to rest between sets but too much rest is self-defeating.

Report any broken or damaged equipment or loose dumbbells to management immediately. Serious injury could happen to you or someone else from damaged or loose equipment.

If you are working out with a partner, or even if you see someone you know, don't begin a conversation when you or he is in the middle of a set. Lifting requires your full attention. It is actually rude to talk to someone actively involved in a set.

Many individuals violate this rule of courtesy--but do so innocently. When someone greets me when I am in the middle of a set–and it happens often–I quickly acknowledge the person. It isn't my nature to ignore a greeting. This rule doesn't apply when you are doing cardio.

Remember, a gym is a place where you work out–not socialize. Any workout loses its effectiveness when valuable time is spent 'lollygagging' or 'yakking.' Work out hard and intensely, and then go home.

Training Partners

A training partner can be a valuable addition to your exercise program. Note some of the benefits:

☞ motivate and encourage
☞ help with the last couple of reps
☞ assist with a heavy weight

Of course there has to be a little 'give and take' with a training partner. What I mean is that you can't only do your favorite exercises. Your partner has a voice in the program too.

Over the years I have had a few training partners; I have worked with one and I have worked out with two (**Remember, two is max**.) With a training partner, you rest for as long as it takes your partner(s) to do his/their set(s).

Remain with your partner while he is doing his set. This is especially important when doing exercises such as the squat and bench press. He may need a 'spot.' **[Note: a spot is being watchful and ready to help lift a weight if needed]**

Training partners agree to meet at the gym at a certain time. You may also agree to notify the others if you can't make a training session for whatever reason. If myself or my training partner know in advance that we will miss a day, we notify each other. However, just because your partner cannot make a certain session is no excuse for you not to go. Discipline is the name of the game here.

The Spot

In weight lifting, a 'spot' means you are there to watch, and assist if a person needs help completing a rep, or even to initially lift a barbell from its rack for a bench press. Beginners as well as the more advanced lifter may need a spot.

It is crucial that you spot a person correctly. Incorrectly spotting someone on a bench press or a squat can result in injury. First of all, let nothing distract you when you are spotting someone. That person needs your full attention.

Spotting does not mean that you do the bulk of the lifting. A perfect spot when needed is applying **just enough** assistance to keep the weight from stalling. You may also need to re-rack a barbell.

The Beginner

If you are new to weight training, there are certain precautions you will want to observe. First off don't go 'gung-ho'–your muscles are not used to weight training. So take it easy.

Lifting weights is not like anything you do in your normal, everyday life. Therefore your muscles must adapt and get used to it. While they are doing that, they will be sore within 24 to 48 hours of training. Don't be alarmed–this is normal

Work on using correct form (more on that later.) Don't try to impress your friends with attempting to lift too heavy a weight. You will only wind up hurting, and maybe even worse, **embarrassing** yourself.

Make certain to allow your muscles to rest at least 48 hours before training them again.

You should also be aware that there is a difference between being sore and having an injury. The pain and discomfort of an injury will continue, and probably get worse if not treated. However muscle soreness will go away after a certain period of time. How long depends on you as an individual.

CHAPTER 2: MUSCLE GROUPS

Chest

The chest is made up of two muscles: **pectoralis major** and **pectoralis minor**. They are usually referred to as 'pecs.' The pectoralis major is a large triangular shaped muscle covering the upper part of the chest. Its purpose is to adduct (draw towards) and flex the **humerus**. The humerus is the bone in the upper arm which runs from the shoulder to the elbow. The pectoralis minor is a smaller muscle lying directly beneath the pectoralis major.

Typical bodybuilders, weight lifters, and power lifters, usually refer to the chest as *pecs*. The chest is a pushing muscle.

Typical chest exercises are the bench press (flat, incline, decline), pushups, and dumbbell or cable flyes.

Back

The back, without becoming too technical, and staying within the realm of bodybuilding, is primarily the **latissimus dorsi** ('lats' for short) . The latissimus dorsi or lats for short is a triangular, flat muscle. It is basically a 'pulling' muscle.

The back works in opposition to the chest. The chest and back form the classic 'push/pull muscle combination.

Back exercises are the pull up, rows (dumbbell and barbell), and the lat pull down.

Shoulders

The shoulder comprises three muscles: *anterior* (front), *posterior* (rear), and *lateral* (side.) The technical name for shoulders is **deltoids** (delts for short.)

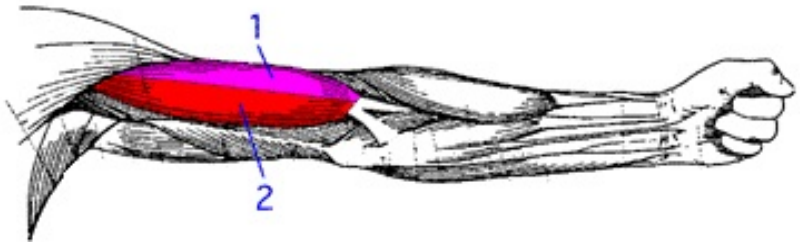
The anterior or front deltoid lifts your arm in front of you. The posterior or rear deltoid brings your arms to the rear. Lateral or side deltoids lifts your arms out to the side.

The primary exercise for the shoulders is the military press.

Arms

The arms are known as the 'showy' muscle. It is usually the first body part looked at, and flexed. The arm is composed of *bi*ceps brachii and *tri*ceps brachii.
'Brachii' means 'of the arm.'

Biceps
The biceps ('bis' for short) , as the name implies, is made up of **two** heads, the **short** head and the **long** head. The primary function of the biceps is to rotate the forearm and to flex the elbow. The biceps is located in the front of the upper arm.

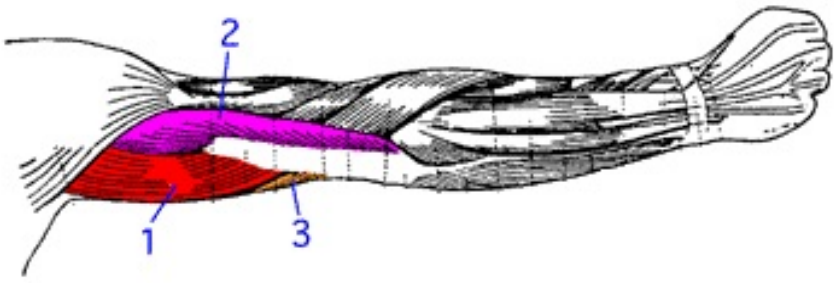


[Image above right: (1) long head (2) short head]

The biceps is a 'pulling' muscle. The common exercise is the curl.

Triceps

The triceps ('tris' for short) is made up of three heads–the **long** head, **lateral** head, and **medial** head. It makes up approximately 70 percent of the upper arm mass. The main function of the triceps is to extend the elbow. It is a 'pushing' muscle and antagonistic to the biceps.



[Image above right: (1) long head (2) lateral head (3) medial head]

Forearms

Although not as 'showy' as the upper arm, the forearm nevertheless is a part of the arm. It is the forearm's job to bend the wrist. A strong forearm is necessary for a strong grip.

Wrist curls performed with either a barbell or dumbbell are used to build strong forearms.

Legs

The legs consists of three muscle groups: **calves**, **quadriceps femoris**, and **hamstrings**. The quadriceps and hamstrings are antagonistic groups comprising the upper legs. Of course the calves make up the lower legs.

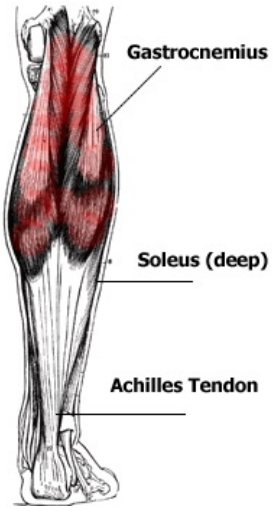
Quadriceps

The quadriceps, also known as thighs, is the front part of the leg. It consists of four parts. The quadriceps ('quads' for short) is a 'pushing' muscle. They function as extensors of the knee joint.

The basic movement or exercise for the quadriceps is the squat. This movement also hits the hamstrings to a lesser extent. Another popular exercise is the leg extension.

Hamstrings

The hamstrings is also known as the leg 'biceps.' It is antagonistic to the quads and is thus a 'pulling' muscle. Lying leg curls targets the hamstrings.



Calves

The calves are difficult muscles to develop. They occupy the lower part of the leg–below the knee. The calf consists of two muscles: the **gastrocnemius** and the **soleus**.

The gastrocnemius raises the heel. The function of the soleus is to raise the heel also–except it does it when the knee is bent (when you are seated for instance.)

The gastrocnemius is made up of two heads: the **medial** and the **lateral**. When developed, it forms a diamond-shape. The soleus lies underneath the gastrocnemius, on the rear.

The basic exercise for the **gastrocnemius** is the standing calf raise. The exercise which targets the **soleus** is the seated calf raise.

Mind/Muscle Link

Though many people may not realize it, the mind plays an important role in lifting weights. As a matter of fact, the mind should not be limited to just lifting weights, but to any physical activity.

Any physical activity, not only exercise, begins in the mind. And if the mind is continually used throughout your training session, the results can be fantastic. As far as the mind applied to weight lifting, first visualize the exercise. Next visualize what you want to accomplish, and what you want your body to look like.

Picture yourself doing the particular exercise in good form, and achieving results with each and every rep. For example, if you are lifting to tone your muscles, you might think the following, “My legs are getting more and more toned with every rep.”

When you are exercising, don’t allow yourself to be distracted by anyone or anything in your immediate area.

CHAPTER 3: TONING MUSCLE VS. BUILDING MUSCLE

Sets and Reps

In order to train with weights effectively, you have to learn the 'lingo' or language of weight lifting. 'Sets' and 'reps' are terms you will hear constantly in a gym setting.

What is a set? Simply put, a set is a group of reps or an arbitrary number of reps. 'Reps' is short for *repetitions*. A repetition is the start of a particular exercise taken throughout its entire 'range of motion' until you reach its end. At the end, the muscle is fully contracted.

An exercise, barbell curls for instance, is composed of several sets.

Toning Muscle

Toning a muscle signifies strengthening and conditioning. Unused, a muscle atrophies and becomes very inefficient. As a result, a person is not as strong as he could be and the muscle could be injured very easily. The oft-quoted phrase *use it or lose it* is very appropriate when it comes to the muscle.

The best way to tone a muscle is to use light weights and high repetitions. A good range for toning is 12 to 15 reps for upper the body (chest, back, arms, and shoulders) and 15 to 20 reps for the legs. Why more reps for the legs? Because it is a big muscle.

Building Muscle

Building a muscle, or providing enough stimulus in order for it to grow (hypertrophy) requires low reps and heavy weight. Of course 'heavy' and 'light' in relation to weights is a relative term. What is light for one person may be heavy for another.

The number of repetitions required for growth is around 6 to 8 for upper body, and 10 to 15 for the lower body.

Rest

Whether toning muscle or building muscle, rest is essential. It took me awhile to realize that initially. When I first began training in a gym, I was 'gung-ho.' I trained six days a week. I didn't realize that I was working against myself.

Rest is as important as training. As a matter of fact, training a muscle provides the **stimulus** for muscle growth. Weight training breaks down (damages) muscle tissue which sets the stage for **growth**. Rest is the period when growth actually happens. Muscle fibers repair themselves and grow stronger and bigger in order to be able to handle the stress next training session.

While I was working out six days a week I was preventing muscle growth. I did not provide adequate time for my muscles to recover from the previous workout.

I'd recommend no less than 48 hours rest between training sessions for all muscle groups. This is regardless of whether you are toning or building muscle. I now work out four days a week training each muscle once a week.

Between sets

Although rest between sets is obvious–everybody does it naturally–many overdo it. Rest between sets is essential to allow the working muscle to recover and replenish its energy supply.

I recommend resting less than two minutes–1 minute to a minute and a half–for toning. As mentioned under the sub-topic *Toning Muscle* above, the weight used is relatively light and the number of reps is high. If you are lifting for mass, your test periods should be between three to four minutes. This allows sufficient recovery time to maximize your strength levels for the next set.

Resting any longer for your respective program is counterproductive. You allow your body to cool down too much thus robbing you of optimum results.

Nutrition

Nutrition is the third leg of intelligent weight lifting. Whereas training provides the stimulus for growth, and rest is when recovery and growth actually occur, nutrition provides the muscles with the necessary nutrients (fuel) **to grow**.

When you lift weights, you actually tear the muscle fibers. These are micro-tears–not a strain or a pull. This is one reason why you experience soreness a day or two afterward. You also deplete the muscle under stress of glycogen.

The glycogen must be replenished and the tears must heal. Both require nutrients. There is a **window of opportunity** within an hour or two after training when the muscles are primed for nutrients. The nutrients at this time should consist of high glycemic carbohydrates, and protein. Liquid form is ideal because the nutrients are rapidly absorbed into the body.

In order to provide the fuel for optimum growth and repair, and the overall health of your body in general, your meals should be frequent and clean. By ‘clean’ is meant that your food intake should be whole foods–plenty of vegetables, fruit, nuts, fish, organic and free-range meat, etc.

You are allowed to have a ‘cheat’ meal or snack once a week to eliminate boredom.

CHAPTER 4: TRAINING CORRECTLY

I will describe the exercises for the various muscle groups using either a barbell or dumbbells. The use of machines pretty much eliminates the question of form. You are basically locked into a fixed position.

Always control the weight–don't let it control you. This means you eliminate gravity or any kind of body 'english' from the movement.

The Warmup

I can't emphasize enough the importance of warming up the muscle before training it. During warmup, you get blood flowing in the muscle, making it pliable. This prepares it for the heavier weight that is to come.

Before warmup, a muscle is stiff and cold. Under sufficient stress, it can be easily injured. Not only can you more easier strain or pull a cold muscle, but the weight will seem to be heavier too.

Although different people will use a variety of methods to get blood circulating in their muscles prior to doing their working sets, I prefer to warmup by performing the exercise I plan to use in my working sets. For instance, if I am going to train my biceps by doing curls, I will warmup with curls.

The warmup should consist of 10 to 15 reps with a very light weight. One to two warmup sets should be enough to prepare your muscle for the heavier weights to come.

You also might want to stretch your body prior to weight training. There are individual stretches for each muscle group. Stretching is beyond the scope of this book. But if you do decide to incorporate them into your weight training routine, do it along with, and not instead of, warming up with a light weight.

Form

This refers to correctly lifting weights along its entire path–from start to finish. Correct form means correct body position during a muscle group's entire range of motion. This assures that the muscle under tension is bearing the weight for maximum benefit. To put it in layman's language–**no cheating**.

Cheating involves jerking and nudging a weight to create initial movement. This eliminates the muscle itself from benefitting from the exercise. **Cheating is counterproductive!**

If you cheat during the course of lifting a weight, you only cheat yourself!

Correct form also eliminates a possible injury. One of the easiest and most common way to injure yourself is to use incorrect form and too heavy a weight.

It is important that you master the correct form for all exercises. Correct form supercedes the weight you use. **It reigns supreme!**

How Much Weight Should I Use?

How do you determine how much weight to use training a particular muscle group? That depends to two things: (a) you as an individual and (b) the particular body part you are training. Obviously you will be able to use a lot more weight training legs than training arms.

Each of us have different strength levels. To find yours, experiment. The following works regardless of which muscle group you are training. Let's say for example that you are training biceps using dumbbells. If you can easily perform 10 reps, the weight is too light.

Note: if you are lifting weights in order to tone your muscles, you want all of your reps to be relatively easy. If, however, you are lifting to build muscle, you want to struggle a little on the last rep or two (**while at the same time using good form**.) All comments and recommendations that follow are for those of you who are lifting weights to build muscle.

You want to use a weight where you are struggling on the last couple of reps. So for the dumbbell curl example, pick a dumbbell which you can lift in good form for eight reps.

Be aware that while your muscles will grow strong in no time, your connective tissue such as ligaments and tendons will take longer to get used to the stress. Go slow!

Training Biceps

You indirectly hit (involve) your biceps when you do back exercises. But biceps curls will isolate your biceps.

When doing either barbell or dumbbell curls, the very first thing you want to do is stand erect. To make sure that you are standing straight and not hunched over, stand with your back to a wall. Your head, upper shoulders, and buttocks should make contact. Your are in perfect alignment.

Note: dumbbell are slightly more difficult and awkward than a barbell. I suggest you begin by using a barbell. Once you have mastered it, and you begin feeling more comfortable in general, you can alternate with dumbbells.

Be certain to keep a straight posture throughout the exercise. If you feel that you have to jerk the weight up or twist and turn at the waist, the weight is too heavy. Get a lighter weight.

Curls are for the biceps only. Standing erect ensures that only your biceps are lifting the weight. I have attempted to lift a weight that was too heavy for me by jerking and heaving it up. All I wound up doing was injuring my lower back.

Protect your back–lift a weight that you can perform eight reps in proper form with.

The movement: the beginning of the barbell or dumbbell curl is with your arms hanging straight down with palms facing forward. Space your hands about shoulder width apart if you are using a barbell. Now slowly, without swinging or jerking of any kind, curl the weight upward until your biceps are fully contracted (the palms of your hands are facing you, just below eye level.)

Keep your upper arms pinned to your sides. Only your lower arms should be moving. **If you have to lean backward in order to complete a rep, the weight is too heavy.**

Now lower the weight back to the starting position–**under control!** This means that you don't drop the weight under the influence of gravity. Your *isolated* biceps should be doing all the work.

Do three sets of eight reps each

There are a great variety of exercises for the biceps–seated and standing concentration curls, hammer curls, and reverse curls. Don't worry about these for the time being. The barbell and dumbbell curl is the basic exercise for the biceps.

If you use machines for curls you won't have to worry about form. They are all designed so that you are seated.

Training Triceps

You will indirectly hit your triceps when you do chest exercises. However I will describe how you can isolate them.

We are going to perform triceps extensions using a barbell. Again, like biceps curls, you can use dumbbells. But it is easier with a barbell.

Triceps extension can be performed either seated or lying down on a bench. If you elect to do it seated, make certain that you use a bench with a back support. This exercise can be done standing, but it can put undo pressure on your lower back. I'd advise against it.

The movement: whether you are seated or lying on your back, grab the barbell with your hands shoulder width apart.

> **Seated**: raise the barbell over your head and lower it backward as far as you can; your elbows should be pointing out from your body. This is the starting position. While you keep your elbows in a direct line with your body (don't allow them to move outward), straighten your arms locking your elbows. This is one rep.
>
> Now lower the weight back to the starting position–**under control!** This means that you don't drop the weight under the influence of gravity. Your *isolated* triceps should be doing all the work.
>
> Do three sets of eight reps each.
>
> **Lying**: raise the barbell and move it backward over your head to a point just above your forehead (this particular form of triceps extensions is also known as 'skull crushers' for obvious reasons.) Your elbows should be pointing straight up. Keeping your elbows tight into your body. Straighten your arms locking your elbows. This is one rep.
>
> Now lower the weight back to the starting position–**under control!** This means that you don't drop the weight under the influence of gravity. Your *isolated* triceps should be doing all the work.
>
> Do three sets of eight reps each.

Whether seated or lying, perform the movement by **pivoting about your elbows**. In other words, your upper arms should **remain fixed** while you straighten your lower arms to lockout.

Training Chest

When you train your chest, you will indirectly use your shoulders and triceps too. The basic exercise for the chest is the bench press. In order to stimulate your chest as much as possible, you want to eliminate your shoulders and triceps as much as possible.

The closer to your chin you bring the barbell down, the more your shoulders will be involved in the movement; the closer to your bellybutton you bring the barbell down, the more your triceps will be involved.

We seek a compromise in order to isolate the chest. Bring the barbell to a point just over your nipples, or slightly below. This way your chest will be doing most of the work.

Note: by bringing the barbell to a point over your bellybutton, and taking a narrower grip, you will effectively work your triceps. **You don't want to take too narrow a grip as this will place undo stress on your wrists**.

The movement: first a word of caution; the bench press is one of a few exercises which have the greatest potential for injury. Make certain that the weight you use is light enough for you to do 6 to 8 reps with strength to spare. I have had the unpleasant experience of bench pressing without anyone to spot me. I used a weight which was too heavy for me to complete my set. I was unable to push the weight back up to rack it. I had to let it lay on my chest, and roll it down my legs to the floor. **If you are a beginner, or even if you are experienced, use a light enough weight to be able to rack the barbell when you have completed your set!**

I usually take a slightly wider than shoulder width grip (shoulder width is fine though.) Make certain that your head, upper back, and buttocks make contact with the bench. **Don't lift your hips in order to cheat the weight up!**

Lift the barbell from its rack. Lock your elbows at the top. Slowly lower the barbell to your chest, **making contact**. This is the starting point for your first rep. Now press the weight up just short of lockout. You want to keep the stress on your chest. This is one rep.

Do three sets of eight reps each.

The non-weight equivalent to the bench press is the pushup. So if you are on vacation and your hotel doesn't have a weight room, substitute pushups.

Training Back

Weight training the back indirectly involves your biceps. The exercise I will be describing to train your back is known as 'rows.' As with all the previous exercises, rowing can be done with either dumbbells or a barbell.

You should be particularly careful with this exercise because it puts your lower back in a potentially risky position. Rowing involves bending over at the waist. Your upper body should be parallel with the floor.

Don't attempt to use heavy weight with this exercise!

The movement: with the barbell lying on the floor, bend at the waist and grab it with a slightly wider than shoulder width grip. Your upper body should be parallel to the floor (in other words, your back should form a straight line with the floor.)

This next caution is very important. Keep your lower back in its natural position. **Do not round it!**

Slowly lift the barbell up to your chest (nipples.) Keep your back straight and do not 'jerk' the weight up. You have performed one rep. Slowly lower the weight to arms length (do not place it on the floor until you have completed the set.)

Do three sets of eight reps.

Training Shoulders

The basic exercise for the shoulders is the military press. The chest and triceps are used to a certain extent in shoulder exercises.

Although the military press can be done standing, I prefer doing it seated. Doing it while standing puts tremendous stress on your lower back.

The standard press is performed by lowering a barbell behind the neck. An alternate way is to do it is to the front. Go light on the weight until you get accustomed to the movement. Remember, form is everything.

The movement: the gym is the best place to do the military press because most have the special bench with barbell racks specifically for the military press. This movement can be quite awkward when performed behind the neck–so take it slow and easy.

Grab the barbell shoulder width or slightly wider and press straight overhead. Slowly lower the weight behind the neck until it touches your upper back. This is one rep.

Do three sets of eight.

Of course this exercise can be done with dumbbells too. Again you want to protect your lower back so I would advise you to do it seated. If you do it at home, make certain that the chair you use has a straight back.

Grab a pair of dumbbells and position your hands so that the palms face forward. The starting position is with your arms bent 90 degrees at the elbow. (Your upper arms are straight up and down, perpendicular to the floor (imagine them forming an upside down 'T' with the floor.) Your lower arms should be in a straight line, out from your body. This makes them parallel to the floor)

Press the dumbbells straight up keeping your palms forward. This is one rep.

Do three sets of eight.

Training Legs

The 'grand daddy' of all leg exercises is the squat. Done correctly, it hits both your quadriceps and hamstrings (front and back of your legs.)

Over the years I have injured my lower back doing squats. This happened because I did it incorrectly. I want you to avoid my mistakes, and do it correctly. Towards that end, I will be very clear in my instructions on how to do the squat without incurring injury, and getting the maximum benefit from it.

Note: I recommend the squat be done in a gym only. The gym should have a squat rack. The best type of rack is what I would describe as a 'safety' rack. This rack has metal rods at different heights to accommodate lifters of varying heights. And out from the rods at a height of approximately 3 to 4 feet are 2 metal stands–one at each side of the rack.

These stands come out from the squat rack and the rods. To use these stands, a squatter would stand between the stands, and squat. If he is unable to complete a rep, all he has to do is drop to the floor allowing the stands to catch the weight. The safety squat rack allows squatting without a spotter.

I use this squat rack. I go out beyond the safety stands because I know I can safely squat up to 225 pounds without a spotter.

The movement: the barbell rests just below the bone at the top of your shoulder blades. Some people prefer to use a pad to cushion their neck. I have never used a cushion so I am used to the weight.

Hold the barbell with your hands shoulder width or slightly wider. Keep your eyes focused straight ahead throughout the exercise.

The barbell should be at a height where you have to lower yourself in order to unrack it. Make sure you correctly place it on the top of your shoulders. Once in place, unrack the weight by straightening up. Don't bend your wrists–keep them straight as you keep the weight on your back. Remember this one fact:

Your upper back supports the barbell–not your hands!!!

After unracking the barbell, find a stance which is comfortable for you. The closer your feet, the more stress you'll put on your knees; the wider your stance, the less stress. I keep my feet a little wider than shoulder width apart. The toes of your feet should point out at about 30 degrees.

Now this is important. Throughout the movement, you want to keep your lower back in its natural position. Don't round it. Squat as though you were getting ready to sit on the toilet. Your hips go back first.

You want to go down far enough until your upper legs are parallel to the floor. **Don't go below parallel.**

When you are parallel, don't bounce in the transition but come up smoothly. Squeeze your glutes hard and press up from the heels of your feet. Again, keep your lower back in its natural position and don't lean forward. This is one rep.

Do 3 sets of eights reps.

THE WRAP-UP

Weight training is indispensable for **young and old** alike. And I would go so far as to say that all senior citizens, as much as they are physically able to, **should** engage in a moderate weight training program on a regular basis. A weight lifting program will offset the natural decline in muscle mass as the body ages.

Not only is lean body mass lost as we age, but so is balance and coordination–resulting in falls. This is one of the reasons why so many of our senior citizens are confined to nursing homes. They easily lose their balance and fall, resulting in broken bones–especially hips.

Seniors who incorporate a weight training program into their daily activities will remain independent. They will not need assisted living, and will be able to handle their own groceries. And, maybe most important of all, they can remain at home.

Studies have shown that a weight lifting program can drastically reduce cancer risk as well as heart disease, diabetes, and obesity. This reduction in risk factors will translate into little to no dependence on health care and expensive pharmaceutical drugs.

Contrary to what some may believe, a person doesn't have to train heavy to reap the benefits. I am not looking for you to become the next Mr. Olympia or Mr. Universe.

Feel great daily by *lifting weights intelligently*.